NETHERLANDS
EAST-INDIAN
SAN-FRANCISCO-
COMMITTEE.

DEPARTMENT OF AGRICULTURE
INDUSTRY & COMMERCE

No. XXII

Some Facts about Tobacco

in Netherlands East-India

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SOME FACTS ABOUT TOBACCO IN NETHERLANDS EAST INDIA.

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Full grown tobacco: the undermost leaves have been reaped.

SOME FACTS ABOUT TOBACCO IN NETHERLANDS-EAST-INDIA.

TOBACCO AS A COMMERCIAL ASSET.

Child of the tropical and subtropical zones tobacco has in consequence of political and economical rivalries been transplanted to higher latitudes. However in course of time the tropics and subtropics have resumed their rights on their offspring and disputed it to the temperate zones. In this competition of latitudes for tobacco the tropics and subtropics remained the winners. At present time the production of leaf tobacco for the supply of the worldmarket is virtually concentrated in the tropics and subtropics, chiefly in the South of the United States with Cuba and Porto Rico, Brazil and the Malayan Archipelago with the Philippines, tropical Africa aspiring to clasp the tobacco girdle round the earth.

Of these centres of the tobacco production the Malayan Archipelago until half a century ago did not seem ever to be able to get a prominent place amongst them. In 1862 its export of tobacco was limited to 65,600 bales or about 11,5 millions of pounds, only from Java and consisting half of leaf tobacco and half of scrubs, this produce not enjoying on the market any superiority over other competing brands. Meanwhile a fortune was laying hidden in an unobserved part of that Archipelago waiting its discovery. The discoverer appeared that same year in the person of a young Hollander who then landed in the district of Deli of the island Sumatra with the purpose of trying his luck there with the cultivation of tobacco. Thinly populated, marshy and for the greatest part covered with jungle Deli was till then left unexplored and thought good for nothing. The young Hollander who landed there was the first of his race to think of that out of the way place. He went there in a native craft and with no other idea than to

find there spare land that would not be contested to him by competitors. The result would be at variance with this idea. Nowhere in the Archipelago afterwards the land has been so much coveted as there. As a second Caesar he came, saw and vanquished. The first lot of tobacco he raised there and marketed next year at Amsterdam directly drew the attention of the professionals of the trade. It was found to possess exceptional qualities and to surpass any other brand known. The fame of Deli as a tobacco district was fixed and his luck made. Capital flowed on to that forgotten and abandoned part of the world and soon transformed the wild jungle into a tobacco paradise enjoying a marvelous prosperity. And as the company of prosperity is always sought for, coffee, rubber and tea subsequently came to share there the destinies of tobacco. At present time the annual export of tobacco from that district amounts to 50 millions of pounds worth some 28 millions of Dollars.

In the meantime tobacco at Java, stimulated by this example of Sumatra and becoming aware of its hidden potentialities, strove and learned to proceed its way on new lines. Whereas formerly it had followed mostly the wild cat system locating itself without much discernment where it found available land, it now began to apply scientific observation, experimental and rational methods and on these lines succeeded in transforming its cultivation from a happy go luck adventure into a well founded profession. It learnt to find the districts which by the structure of their soil and their climate suited it best. While in former years a dozen districts of Java participated in the production of leaf tobacco at present time this production is virtually concentrated in two districts only, the other being utilized only for the production of scrubs. The Java leat tobacco takes its origin for 53% from the Southern half of the centre of the island, for 35% from a district in the Eastern part of the island, also situated on the Southern half, and for 12% from sundry parts of this Southern half of the island.

Proceeding on these lines Java tobacco yearly increased its output and associated itself to Sumatra tobacco in getting year

after year a greater hold on the tabacco market of the world. In 1912 the export of Java tobacco amounted to some 121 millions of pounds, leaf tobacco and scrubs, worth some 12 millions of Dollars. In consequence of the output of both Java and Sumatra the Malayan Archipelago nowadays ranks as the leading tobacco supplier of the world.

In this production Europeans and natives each have their own distinct share. Leaf tobacco is exclusively grown on vast estates under European control, scrubs are for the greater part a native product cultivated under the advance system and bonded under contract to European firms who have got their establishments for gathering, drying, handling and storing the tobacco in the districts. Besides this native tobacco trade, which is dependent on European capital, there is to be recorded in Java and Sumatra a noteworthy production of native grown cut tobacco for local consumption, which forms an important and lively inland trade throughout the whole Archipelago and even an export to neighbouring countries worth 600,000 Dollars. Both for the European and the native community tobacco means large asset of commerce and for both it contributes in a high degree to the welfare of the country.

Also for the mother country it represents a considerable interest. The Netherlands East Indian output of leaf tobacco and scrubs is entirely marketed in Holland, at Amsterdam and Rotterdam but especially at the first named place, which nowadays is the world's great emporium of tobacco. There throughout the greater part of the year it is sold at auctions, which are attended by the professionals in the tobacco trade of Europe and America and from where the product finds its way to Europe and the U. S. A. These latter are purchasers of a tenth part of the Sumatra output.

The acreage under tobacco in Netherlands East India, as far the tobacco cultivated under European control is concerned, is 107,000 acres and the business employs yearly a running capital of some 30 millions of Dollars, while the capital invested in tobacco amounts for Sumatra to a market value of $ 62,692,000 and may for Java be estimated at 15 millions of Dollars. Besides other merits the Netherlands East Indian tobacco,

especially the Sumatra product may claim to be great maker of securities for the Amsterdam stock exchange.

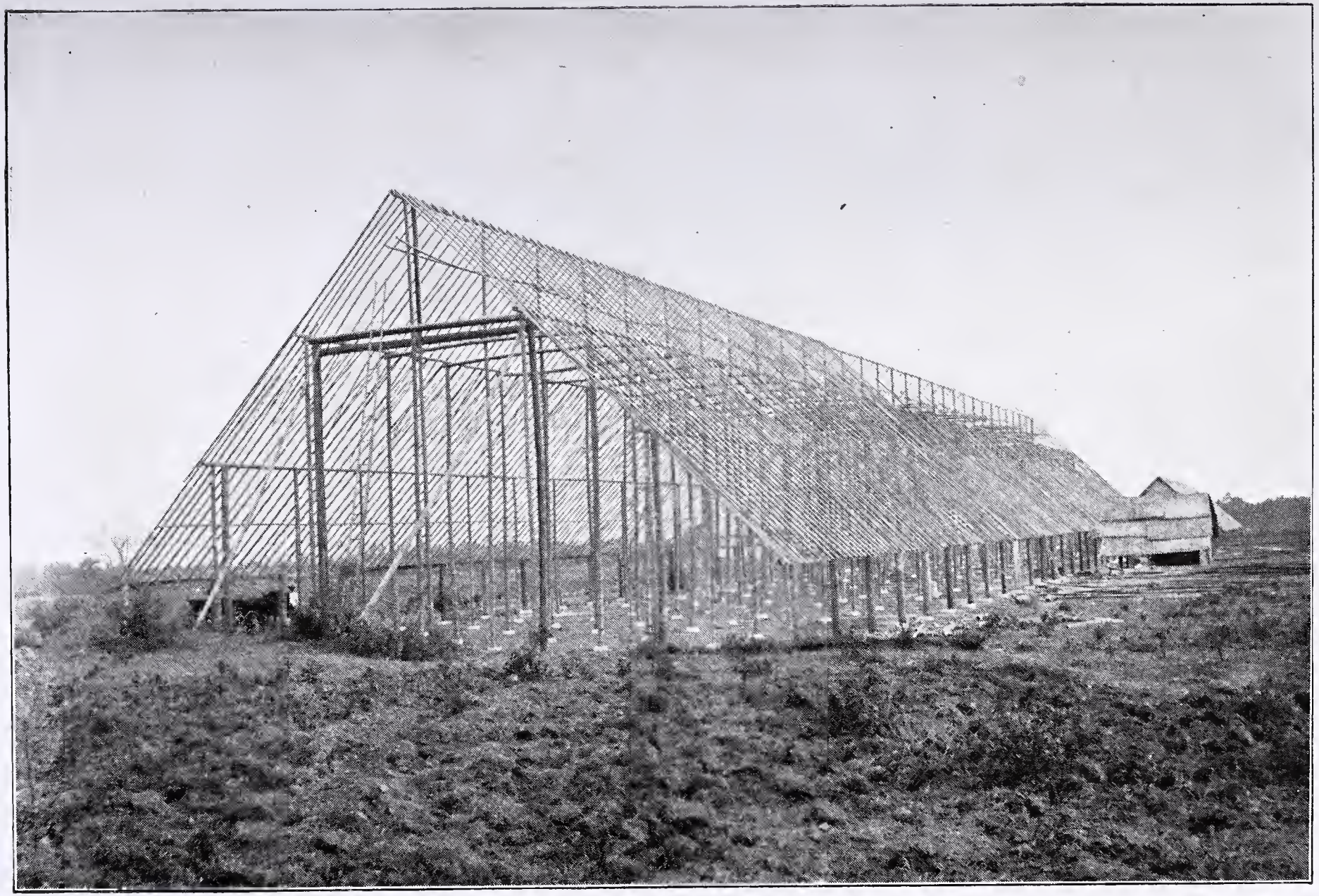
The growth of this trade may appear from the following survey of the exports in bales of about 175 pounds each:

Years	*Java.*	*Sumatra.*
1870	99,151	2,868
1880	150,417	64,965
1890	182,508	236,323
1900	241,536	223,731
1910	458,025	234,133
1911	707,742	280,704
1912	693,279	282,920

How the finished article is got.

The finished article is for the consumer the cigar. For the tobacco grower it is the dried and prepared leaf of the tobacco plant. To satisfy the cigar maker the leaf must answer to a good many requirements; it must be long, wide sized, thin, flexible, easily burning and smooth, moreover it must have a slender nerve system, a homogeneous light brown colour, and, if possible, a soft but pithy flavor. This last named quality however does not influence the price. The usefulness for cigar makers' purposes is a criterium for the market prices and cigar makers, finding more profit in the first named qualities and being able to remedy lack aroma, in the first place look for these other qualities, as these predispose the tobacco leaf to be utilized as a cover for the cigar. The necessity to answer these requirements of the market characterizes the tobacco planters' trade. More than coffee-, tea- and rubber planters the tobacco planter must be a professional because his finished article has to be in higher degree than theirs a victory of culture on nature.

Tobacco growing in Netherlands East India from the beginning to the end running on strict technical lines has proved an object only for vast, well capitalised entreprises which can afford the employment of well educated and trained employees



Drying shed in the make.

and the providing for the costly establishment as is necessary for the decent exercise of the profession. Farming on small holdings may in tobacco be an object for natives, the cultivation of leaf tobacco for the European market lies beyond their reach. First of all the tobacco grower has to provide for capital. Then he has to provide for the securities on which he will invest this capital. These securities are a proper soil, a suitable climate and good seed, and in Sumatra also imported labour. In Sumatra land must be purchased on long lease and then requires a costly preparation, the jungle having to be cleared, a system of drains to be made and connecting roads and a network of paths to be traced. The difficulty thereby met is to acquire labour. The district of Deli as well as the neighbouring districts having a small native population and all the necessary labour has to be imported from other parts of the Archipelago, especially from Java, and also from China.

In Java the tobacco grower for two reasons will avoid the expense of purchasing land and as long as he can will avail himself of hired land. Firstly because virgin land is not so suitable, tobacco growing thereon too luxuriantly owing to absence of the required qualities, and moreover land that has been drained for rice enjoys the preference for a tobacco crop subsequent to the rice crop, the use for tobacco growing only being half a year. A second good reason for utilizing land that already has been planted on before is the necessity to select tobacco soil carefully with regards to the structure of the soil, the condition of the subsoil and the climate. Tobacco does not agree with a wet subsoil. It will only thrive on a deep, loose soil. It refuses to grow on a water resorbing clay. Therefore a loose, sandy soil has to be looked for. The climate is the next important question because climate is most of all instrumental in making long, wide sized leaves of a thin, smooth texture by adequately balanced drought and rain during the first and the second half of the plant's lifetime.

The tobacco plant will succeed best when in the first half of its life it is trained in a school of dryness and temperance by which the green parts above the ground are kept short at the same time lengthening and strengthening its roots. Rain

coming off in due time the crop will be a success. The plant gets over its full growing process in a short time. Rains in the beginning and drought in the latter half of the growing process, or rains throughout the whole of that process, would spoil the crop. So the climate of the region where to start with tobacco has to be studied carefully and the planter's first task is to select with much discernment both soil and climate. Through these selections the Java tobacco gradually moved to the quarters where it is located now.

In Java land that has been irrigated for a rice crop is generally preferred for tobacco, the climatical requirements of which are answered by the usual climatical conditions of the season following the rice crops and for this reason tobacco is for the greater part cultivated on the vast plains at the feet of the hills and on the lower slopes of those hills which bear a rice crop in the first half of the year, during the rainy season. There it alternates with rice with intervals of two years. However ricefields not being always sufficiently available for hire, tobacco in Java has to a great extent also found its way to the slopes of the hills which are not under irrigation. In Sumatra the agricultural system of tobacco does not count with irrigated land and ricefields. It has at its disposal vast stretches of unirrigated land which are parcelled in eight parts or more, one of which alternately every year is husbanded for tobacco.

As a third important matter for the planter we have mentioned good seed. These are thoroughly selected in consequence of which the breed has been gradually improved and is still improving by selecting as seedbearers the individual plants endowed with the proper qualities.

When so far he has obeyed to the law of selection the planter now has to proceed with the plantation. First of all he has to till the soil and thereby to attend principally to the extinction of all elements noxious to the tobacco plant. This shows a marked propensity for being susceptible to fungi at its roots as well as at its leaves. Therefore the soil is carefully ploughed or hacked to a good depth and turned over while at the same time it is systematically drained. Then nurseries are made for the seed to germinate. The nurseries are

by means of adjustable screens protected against sunshine, wind, rain and other inclemencies of the weather. They are daily watered and very carefully watched especially with regards to fungi. Fungi and Bactericeae are from the beginning to the end lurking among the tobacco to get hold either of its roots or of its leaves. Borne by the wind or precipitated from the air by rains these germs spread very quickly from the spot where they once have settled and then in a short time they will make many victims. The whole system of raising tobacco in Netherlands East India is ruled by the idea of fighting this enemy. Therefore the soil is opened and laid thoroughly dry before planting and after planting the young plants are checked in their growth at the beginning in order to enable them to finish their growth fortissimo, in the shortest time possible. There is no other way to fight this pest than by destroying the plants that have been attacked and replacing them by fresh sound material from the nurseries. This can be done as long as the plants are short but would be useless with long tobacco surrounding the young material, this having then no more chance to develop in the shadow of the older plants. This system of preventing the enemy from keeping hold of the plantation makes it necessary to provide for seedling material in double or threefold the quantity that otherwise would be required for the plantation.

The prepared soil is often manured and then lined with rows and along these rows spots are marked. When the proper time has come the seedlings are transplanted to these spots. The soil being thoroughly dry watering of the young plants is necessary to keep them alive. During the growing process of the tobacco the soil is kept clean of all herbs and weeds and the rows of plants are carefully watched with a view to destroying all animal pests, caterpillars, beetles etc which might do harm to the integrity of the leaves. The system of growing tobacco which has proved most useful is a system of nursery followed by an unchecked liberty. Once the rains have set in the plants have outgrown their nursery time, they throw off all ties and gallop through the short time which they have still to grow and to live. The whole lifetime from the transplanting of the seedlings to the time

of maturity lasts three months or three months and a half at the utmost. Half of this time the tobacco is nursed like a helpless baby and the other half it is left unchecked to its own temperament.

Maturity manifests itself by the ends of the leaves assuming a yellowish hue. Fully grown plants reach a height of 7 or 8 feet and produce 25 to 30 leaves of which the top leaves are the smallest, and of least value, the middle leaves the largest and longest and highest graded, and the lowest leaves being the oldest are of a middling quality. The leaves not ripening all at the same time, have to be picked day after day separately according to the symptoms of maturity they show. They are carefully collected in baskets and brought to sheds where their drying process takes place.

These sheds are long spacious buildings erected on an oblong rectangular plan, made of a frame of bamboo or wooden poles, the sides and fronts covered with screens made of twisted bamboo strips, the roof thickly covered with straw or leaves of the Nipahpalm. The sides are kept low, the roof on the contrary is high. The inside is kept undivided but as the leaves come in from the fields, poles are fixed on which the leaves are hung up. There they have to wither slowly and to loose gradually an excess of moisture, while the contents of their cells undergo an oxidizing process by which their colour from green turns into brown. This must be a slow transformation. It is regulated by letting in air from outside or by keeping the air out. For this purpose the screens which cover the sides and fronts of the sheds are made moveable so that they can be opened or shut at convenience.

Fungi here again are the foes for which it is necessary to be on a continual guard. If they were allowed to settle on the leaves they would before long spoil everything.

When the leaves have withered to the desired standard of moisture the process of fixing their colour, flavour and burning qualities is finished by an intense fermentation. For that purpose they are transported to a central shed where they will remain until leaving the estate. Here they are bundled and heaped in big piles and allowed to let their temperament go

by getting excited and hot. The temperature however inside the heaps must be well controled. The piles are from time to time turned over as this is necessary to get the tobacco bundles all of an equal temper and this is repeated until the thermometer shows no further rise of temperature inside the heaps.

Thereupon the bundles are loosened and the leaves are assorted on length and colour. The leaves are measured and separated in three or four classes of length and at the same time the lighter or darker shades are sorted out. At last the leaves of the same length and colour are made into bundles of thirty pieces and then baled. No fold or curl may hereby disturb the leaves' integrity. When shipped the bales of tobacco are carefully stowed away from pepper, aromatic oil or other smelling cargo.

Tobacco planters have to solve many problems which can only be fathomed by systematical scientific research. The enemies of the tobacco plant have to be detected and fought, selected seed to be got, the chemistry of the leaf to be studied. So feeling themselves in a high degree dependent on science they maintain three institutes for scientific research and systematic experimental work. Moreover the tobacco planting industry in Sumatra has a well organized and well equipped sanitary and medical service disposing of a staff of medical men, hospitals, etc. by which it has rendered Deli one of the healthiest parts of the world.